Docket No.: PANT-0301
Title: MODIFIED PEPTIDE NUCLEIC ACID (PNA) MOLECULES
Inventor(s): Peter E. Nielsen, Liam Good, Henrik Frydenlund Hansen, Frederik
Beck, Leila Malik, Carsten Schou, Margit Wissenbach and Birgit Kjaeldgaard
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## DNA

**PNA** 

Figure 1

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Peptide-Cys-smcc-PNA

Figure 2

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Title MODIFIED PEPTIDE NUCLEIC ACID (PNA) MOLECULES Inventor(s): Peter E. Nielsen, Liam Good, Henrik Frydenlund Hansen, Frederik Beck, Leila Malik, Carsten Schou, Margit Wissenbach and Birgit Kjaeldgaard Giwercman

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1 AGATCTTAAA TGCCATTGTG ATGATCTCCT TATCACCCGT CACTCTGACG 51 GGTATATCAA TGCGTCTGGC TTGCCTTTAT ACTACCGCGC GTTTGTTTAT 101 AAACTGCCCA AATGAAACTA AATGGGAAAT TTCCAGTGAA GTTCGTAAAG 151 TATTITTIGA TCCTTGCAGT CTGTTGCATT CTGCTGGGAG CAGGCTCGAT 201 TTATGGCCTA TACCGCTACA TCGAGCCACA ACTGCCGGAT GTGGCGACAT 251 TAAAAGATGT TCGCCTGCAA ATTCCGATGC AGATTTACAG CGCCGATGGC 301 GAGCTGATTG CTCAATACGG TGAGAAACGT CGTATTCCGG TTACGTTGGA 351 TCAAATCCCA CCGGAGATGG TGAAAGCCTT TATCGCGACA GAAGACAGCC 401 GCTTCTACGA GCATCACGGC GTTGACCCGG TGGGGATCTT CCGTGCAGCA 451 AGCGTGGCGC TGTTCTCCGG TCACGCGTCA CAAGGGGCAA GTACCATTAC 501 CCAGCAGCTG GCGAGAAACT TCTTCCTCAG TCCAGAACGC ACGCTGATGC 551 GTAAGATTAA GGAAGTCTTC CTCGCGATTC GCATTGAACA GCTGCTGACG 601 AAAGACGAGA TCCTCGAGCT TTATCTGAAC AAGATTTACC TTGGTTACCG 651 CGCCTATGGT GTCGGTGCTG CGGCACAAGT CTATTTCGGA AAAACGGTCG 701 ACCAACTGAC GCTGAACGAA ATGGCGGTGA TAGCCGGGCT GCCGAAAGCG 751 CCTTCCACCT TCAACCCGCT CTACTCGATG GATCGTGCCG TCGCGCGGCG 801 TAACGTCGTG CTGTCGCGGA TGCTGGATGA AGGGTATATC ACCCAACAAC 851 AGTTCGATCA GACACGCACT GAGGCGATTA ACGCTAACTA TCACGCGCCG 901 GAGATTGCTT TCTCTGCGCC GTACCTGAGC GAAATGGTGC GCCAGGAGAT 951 GTATAACCGT TATGGCGAAA GTGCCTATGA AGACGGTTAT CGCATTTACA 1001 CCACCATCAC CCGCAAAGTG CAGCAGGCCG CGCAGCAGGC GGTACGTAAT 1051 AACGTGCTGG ACTACGACAT GCGCCACGGC TATCGCGGCC CGGCAAATGT 1101 GCTGTGGAAA GTGGGCGAGT CGGCGTGGGA TAACAACAAG ATTACCGATA 1151 CGCTGAAGGC GCTGCCAACC TATGGTCCGC TGCTGCCTGC CGCAGTCACC 1201 AGCGCCAATC CTCAGCAAGC GACGGCGATG CTGGCGGACG GGTCGACCGT 1251 CGCATTGAGT ATGGAAGGCG TTCGCTGGGC GCGTCCTTAC CGTTCGGATA 1301 CTCAGCAAGG ACCGACGCCG CGTAAAGTGA CCGATGTTCT GCAAACGGGT

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1351 CAGCAAATCT GGGTTCGTCA GGTTGGCGAT GCATGGTGGC TGGCACAAGT 1401 GCCGGAAGTG AACTCGGCGC TGGTGTCGAT CAATCCGCAA AACGGTGCCG 1451 TTATGGCGCT GGTCGGTGGC TTTGATTTCA ATCAGAGCAA GTTTAACCGC 1501 GCCACCCAGG CACTGCGTCA GGTGGGTTCC AACATCAAAC CGTTCCTCTA 1551 CACCGCGGCG ATGGATAAAG GTCTGACGCT GGCAAGTATG TTGAACGATG 1601 TGCCAATTTC TCGCTGGGAT GCAAGTGCCG GTTCTGACTG GCAGCCGAAG 1651 AACTCACCAC CGCAGTATGC TGGTCCAATT CGCTTACGTC AGGGGCTGGG 1701 TCAGTCGAAA AACGTGGTGA TGGTACGCGC AATGCGGGCG ATGGGCGTCG 1751 ACTACGCTGC AGAATATCTG CAACGCTTCG GCTTCCCGGC ACAAAACATT 1801 GTCCACACCG AATCGCTGGC GCTGGGTTCA GCGTCCTTCA CCCCAATGCA 1851 GGTGGCGCG GGCTACGCGG TCATGGCGAA CGGCGGCTTC CTGGTGGACC 1901 CGTGGTTTAT CAGCAAAATT GAAAACGATC AGGGCGGCGT GATTTTCGAA 1951 GCGAAACCGA AAGTAGCCTG CCCGGAATGC GATATTCCGG TGATTTACGG 2001 TGATACGCAG AAATCGAACG TGCTGGAAAA TAACGATGTT GAAGATGTCG 2051 CTATCTCCCG CGAGCAGCAG AATGTTTCTG TACCAATGCC GCAGCTGGAG 2101 CAGGCAAATC AGGCGTTAGT GGCGAAGACT GGCGCGCAGG AGTACGCACC 2151 GCACGTCATC AACACTCCGC TGGCATTCCT GATTAAGAGT GCTTTGAACA 2201 CCAATATCTT TGGTGAGCCA GGCTGGCAGG GTACTGGCTG GCGTGCAGGT 2251 CGTGATTTGC AGCGTCGCGA TATCGGCGGG AAAACCGGGA CCACTAACAG 2301 TTCGAAAGAT GCGTGGTTCT CGGGTTACGG TCCGGGCGTT GTGACCTCGG 2351 TCTGGATTGG CTTTGATGAT CACCGTCGTA ATCTCGGTCA TACAACGGCT 2401 TCCGGAGCGA TTAAAGATCA GATCTCAGGT TACGAAGGCG GTGCCAAGAG 2451 TGCCCAGCCT GCATGGGACG CTTATATGAA AGCCGTTCTT GAAGGTGTGC 2501 CGGAGCAGCC GCTGACGCCG CCACCGGGTA TTGTGACGGT GAATATCGAT 2551 CGCAGCACCG GGCAGTTAGC TAATGGTGGC AACAGCCGCG AAGAGTATTT 2601 CATCGAAGGT ACGCAGCCGA CACAACAGGC AGTGCACGAG GTGGGAACGA 2651 CCATTATCGA TAATGGCGAG GCACAGGAAT TGTTCTGA

Figure 3B

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1 TGCTGGTCGC AGAGAGTCTG TACCGGGCGT GGAGCATCAC CACCAACCAT 51 CCTTATCACC GTGAGTGATA AGGGAGCTTT GAGTAGAAAA CGCAGCGGAT 101 GAAACTACAG AACTCTTTTC GCGACTATAC GGCAGAGTCC GCGCTGTTTG 151 TGCGCCGGGC GCTGGTCGCC TTTTTGGGGA TTTTGCTGCT GACCGGCGTG 201 CTTATCGCCA ACCTGTATAA TCTGCAAATT GTTCGCTTTA CCGACTACCA 251 GACCCGCTCT AATGAAAACC GCATTAAGCT GGTGCCTATC GCGCCCAGCC 301 GCGGCATTAT CTACGATCGT AACGGTATCC CTCTGGCCCT CAACCGCACT 351 ATCTACCAGA TAGAAATGAT GCCGGAGAAA GTCGATAACG TGCAGCAAAC 401 GCTGGACGCT TTGCGCAGCG TGGTAGATCT GACCGATGAC GATATTGCTG 451 CATTCCGAAA AGAGCGCGCA CGTTCACACC GTTTCACCTC TATTCCGGTG 501 AAAACTAACC TGACCGAAGT ACAAGTAGCT CGCTTTGCCG TCAATCAGTA 551 CCGTTTTCCG GGTGTCGAAG TTAAAGGCTA TAAACGTCGT TACTATCCTT 601 ACGGTTCGGC GTTGACCCAC GTCATCGGCT ATGTGTCGAA AATCAACGAT 651 AAAGACGTCG AACGCCTGAA TAATGACGGC AAACTGGCCA ACTATGCGGC 701 AACGCATGAT ATCGGTAAGC TGGGCATTGA GCGTTACTAT GAAGATGTGC 751 TGCACGGTCA GACCGGTTAT GAAGAGGTTG AAGTTAACAA CCGTGGGCGT 801 GTTATTCGCC AGTTAAAAGA AGTACCACCG CAAGCCGGAC ACGATATTTA 851 CCTGACGCTG GATCTCAAAC TCCAGCAATA TATTGAAACG CTGCTGGCGG 901 GTAGCCGCGC AGCTGTGGTA GTCACCGATC CGCGTACAGG TGGGGTGCTG 951 GCGCTGGTTT CCACGCCTAG TTATGACCCA AACTTGTTTG TTGACGGTAT 1001 CTCCAGCAAA GATTATTCCG CCTTGTTGAA CGATCCGAAT ACACCGCTGG 1051 TGAACCGCGC CACACAGGGG GTTTATCCTC CCGCGTCTAC AGTTAAACCC 1101 TATGTGGCGG TTTCGGCATT GAGCGCCGGG GTGATCACGC GCAATACGAC 1151 GCTGTTTGAC CCAGGCTGGT GGCAACTGCC AGGTTCGGAA AAACGTTATC 1201 GTGACTGGAA AAAATGGGGC CACGGGCGTC TGAATGTCAC AAGATCGCTG 1251 GAAGAATCTG CGGATACCTT CTTCTATCAG GTGGCCTACG ATATGGGGAT 1301 CGATCGCCTC TCCGAATGGA TGGGTAAATT CGGTTATGGT CATTACACCG

Figure 4A

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1351 GTATCGACCT GGCGGAAGAA CGTTCCGGCA ACATGCCTAC CCGCGAATGG
1401 AAACAGAAAC GCTTTAAAAAA ACCGTGGTAT CAGGGTGACA CCATTCCGGT
1451 TGGTATCGGT CAGGGTTACT GGACAGCGAC CCCAATCCAG ATGAGTAAGG
1501 CACTGATGAT CCTGATTAAT GACGGTATCG TGAAGGTTCC TCATTTGCTG
1551 ATGAGCACCG CCGAAGACGG CAAACAGGTG CCATGGGTAC AGCCGCATGA
1601 ACCGCCCGTC GGCGATATTC ATTCCGGTTA CTGGGAGCTG GCGAAAGACG
1651 GTATGTACGG TGTTGCTAAC CGCCCTAACG GTACGGCGCA TAAATACTTT
1701 GCTAGCGCAC CGTACAAAAAT TGCGGCGAAA TCCGGTACCG CTCAGGTCTT
1751 CGGTCTGAAA GCGAACGAAA CCTATAATGC GCACAAAAATT GCCGAGCGTT
1801 TACGTGACCA CAAACTGATG ACCGCCTTTG CGCCATACAA CAATCCGCAA
1851 GTGGCTGTCG CCATGATTCT GGAGAACGGT GGTGCGGGTC CGGCGGTTGG
1901 TACACTGATG CGCCAGATCC TCGACCACAT TATGCTGGGT GATAACAACA

Figure 4B

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Figure 5